NRC NEWS

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U.S. – Japan Regulatory Cooperation
Supporting Safety and Security - Meeting Future Challenges

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at the
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Konichiwa - good afternoon to all the distinguished guests here today. Chairman Kondo, Chairman Katsumata, and Bill Martin, I am honored to share this opportunity with you today and to give my views on the challenges faced by the U.S. Nuclear Regulatory Commission (NRC) and on the importance of international regulatory cooperation. As usual, I must say that my remarks today are my personal thoughts and not necessarily those of the Commission.

Much of the discussion I hear about the increased global interest in nuclear energy is related to reactor design and construction. However, no reactor can function unless all elements of the fuel cycle operate safely and securely, from the mining of the uranium ore, to fabrication of fuels, to utilization in reactors, to the storage and transportation of wastes. In addition, there is also the entire field of nuclear materials in industrial and medical applications. International cooperation in all of these fields is becoming increasingly important as today's global economy distributes the technical expertise among many countries. Today the NRC is learning and contributing internationally through our exchange of technical information and discussions of regulatory practices. In these exchanges, our cooperation with Japan is highly valued and has been very beneficial.

Let me start by sharing with you what I see today as the priorities for the NRC.

Current Operating Reactor Safety

Safety of the currently operating reactor and materials licensees continues to be NRC's top priority. Construction of new nuclear plants in the U.S. will not be an option without the continued safe operation of reactors today. Safety performance measures, including performance indicators and inspection findings, are strong for most U.S. plants. Our inspection, oversight, and enforcement processes are working effectively to ensure licensees address deficiencies that are identified. Just as we expect licensees to institutionalize lessons learned, the NRC must do the same. The NRC is working hard to learn from experience and from lessons such as the Davis-Besse corrosion event and from international experience as well. It is essential that both the licensees we regulate and the NRC itself remain continuously committed to safety and to maintaining technical competence.

Commitment to safety, or "safety first" for which I understand the Japanese word is (and I hope I come close to the correct pronunciation) "anzendaiichi", requires a "top down" focus from licensee management making safety its top priority. Such a commitment must come from a deeply felt culture of safety throughout the organization. The NRC has improved our reactor oversight program to look for evidence of declining safety culture in licensee organizations. In addition, within our own NRC organization, our Inspector General conducts a periodic anonymous safety culture survey of our employees, and we use those results to focus NRC management attention on areas we can improve. For the NRC, commitment to safety means asking the tough questions, carefully and thoroughly considering the answers, and then making the tough decisions. The commitment to safety that comes from a culture of safety is required of anyone who works in the nuclear field, be they regulator, operator, constructor, fabricator, or vendor. To be effective, a commitment to safety requires technical competence and a questioning attitude, as well as a work environment that actively encourages safety questions to be raised and addressed.

New Reactor Construction

At the NRC, such a commitment to safety extends beyond the currently operating reactors to all the licensees and facilities that we regulate, and further includes our work to certify and license the advanced reactor designs that may become the foundation for new reactor construction in the U.S. The U.S. nuclear industry has announced that over 20 Combined Construction and Operating License, or "COL," applications may be submitted to the NRC over the next few years, representing a potential total of over 30 new nuclear power reactors in 14 different States.

In fact, this process has already begun – in September the NRC received the first COL application for two Advanced Boiling Water Reactors (ABWR) at the South Texas Project site, and on October 31 we received the second COL application, this one for two Westinghouse AP1000 reactors at the Bellefonte site in Alabama. In addition, a portion of a COL application has been received for an Evolutionary Pressurized Reactor (EPR) at the Calvert Cliffs site.

Design Certification activities are also in progress. The NRC staff's review is proceeding for the General Electric ESBWR design certification, we are holding pre-submittal meetings for a design amendment for the Westinghouse AP1000, and pre-application meetings are occurring for the AREVA EPR and Mitsubishi USAPWR design certifications. One year ago the NRC created the Office of New Reactors (NRO), to accommodate the expected extraordinary workload increase in regulatory licensing and construction oversight, without losing focus on operating reactor safety. Operating reactor oversight remains under the existing Office of Nuclear Reactor Regulation. When new plants are ready for licensing – the NRC will be ready too.

To achieve timely NRC reviews of multiple standardized COL applications, the NRC staff is planning to implement a "design-centered" approach. It is based on the principle of "one issue, one review, one position" for multiple COL applications under parallel review. The benefits of a design-centered licensing review will be achieved only to the extent that COL applicants standardize their applications for a particular reactor design, and review schedules will be longer if industry does not follow this model. In addition, reactor vendors and COL applicants must submit applications that are complete and meet very high technical quality standards. We will not compromise our standards to expedite approvals. NRC staff has developed Regulatory Guide 1.206, "Combined License Applications for Nuclear Power Plants," to assist COL applicants in meeting our standards, and future applicants should pay close attention and learn from the NRC's assessment of the first applications.

In addition, both the NRC and the U.S. nuclear industry have a lot of work ahead of us in preparing for new construction under the new licensing and approval process in Part 52 of our regulations. The NRC has been developing and will be implementing its new Construction Inspection Program out of our Atlanta Regional Office. Here also, much of the efficiency and timeliness of our inspection activities will depend on how well industry establishes and adheres to planned construction schedules. As NRC continues to develop our inspection program and train our inspectors, there is much we can learn from our regulatory partners, such as Japan, who have very current experience.

Security

Turning now to the topic of security – security of any element of a nation's critical infrastructure requires a national integration of defensive capabilities. In the U.S., our intelligence, military, state, local, and licensee capabilities work together to provide integrated, multi-dimensional barriers to any individuals or groups who seek to harm our nation. As part of this broad effort, the NRC strengthened its security requirements. For example, the effectiveness of improved plant security continues to be regularly tested at every U.S. nuclear power plant through NRC-evaluated force-on-force exercises, and we continue to improve our regulatory requirements to enhance security of reactors, fuel cycle facilities, and nuclear materials when necessary. We do this in a deliberative manner, engaging the public as much as possible without compromising sensitive information, although achieving an appropriate balance between openness and protecting sensitive information continues to be very challenging for us.

The Commission is also considering the extent to which new plants should incorporate features against the impact of a commercial airliner. The NRC has carefully evaluated existing reactors and required many actions from our licensees to mitigate this possible threat. While the existing plants are adequately prepared, we have an opportunity with new plants to design more of the protective features into the plants from the start and to require fewer operator mitigation actions. Recently, the NRC issued for public comment a proposal to require new plant design applications to include an assessment to show reduced reliance on operator actions in the event of a commercial airliner crash into the plant.

Security issues are not solely focused on reactor licensees. The NRC was recently the subject of a very public "sting" operation by another federal agency, which identified weaknesses in how NRC licenses certain radioactive materials. I should note that the NRC had already taken a graded approach to improving materials licensing and security by focusing more requirements and controls on materials with higher significance for potential misuse. However, as a result of the "sting," we are now taking actions to even further reduce the vulnerability of radioactive materials having lower significance.

Shared Challenges of the Nuclear Industry and the Regulator

I'd like to comment on three challenges that confront both the nuclear industry and the regulator. They are: meeting our future human capital needs, informing the public, and engaging public stakeholders. Earlier I mentioned the importance of technical competence, for both the nuclear industry and the regulator. Future projections indicate that we need more trained workers, but many factors limit our ability to rapidly increase this workforce. One such factor is the expected retirement of the current workforce. It has been estimated that about one third of those working at U.S. nuclear utilities will be eligible for retirement in the next 5 to 10 years and that 90,000 new workers will be needed by 2011, just to continue operating the existing plants. The potential labor shortage not only affects utilities, but also impacts the entire nuclear infrastructure, including national laboratories, federal and state agencies, nuclear technology vendors and manufacturing companies, nuclear construction companies, and university nuclear engineering departments. However, the good news is that student enrollment and graduation rates in nuclear engineering and radiation health programs have been increasing. But even with these increases, there will still be a shortfall of supply, based on the projected demand.

These issues of human capital have concerned me since becoming a Commissioner and I have consistently encouraged that all of us engaged in this field must help students at all levels develop an interest in science and technology careers and vocations. At NRC, in preparation for our expanding workload, we have recently been trying to add about 200 technical staff per year and want to continue that rate for 3 years through 2008. But it is an effort that seems like taking two steps forward followed by one step backward.

For example, in Fiscal Year 2007, we hired 428 new staff and lost 222 for an actual net gain of 206. Once we hire good people in this competitive employment environment we want to keep them. Therefore, our challenge at the NRC includes maintaining our standing as one of the best workplaces in federal government and introducing our employees to the many satisfactions of a career in public service. There is only a single pool of talent to fill all

our vacancies, and the pool must be large enough to supply both industry and the regulator with the talent we both need.

Another educational challenge that both industry and the regulator face is that of informing the public at large. I'd like to offer a quote I recently found on this point, from Admiral H.G. Rickover. It reads as follows:

> "The professional person's standing in the community depends, in the final analysis, on the public's insight of his work, that is, on the educational level of the man in the street. When specialized knowledge of professional people is incomprehensible to the average man, he is apt to flounder between frustrated suspicion and excessive awe, leading him either to interfere unduly with professional independence or to accept naively every claim made by anyone who calls himself a professional."

I would only add one thought to this: greater public understanding of basic scientific principles promotes greater value in the debates that inevitably occur in our open and democratic societies. Both the industry and the regulator must carry on a dialogue with members of the public and certainly with their elected officials. It is a shared challenge that we must both do our part to communicate technical matters simply, clearly, and accurately. As a member of a regulatory agency, I have found that the effectiveness of our public outreach efforts and, therefore, the ability of the public to provide constructive input to the regulatory process depend on how well we communicate within our open and public regulatory decision processes.

International Regulatory Cooperation

I'd like to close with a few thoughts on international regulatory cooperation. The challenges faced by the NRC in maintaining safety and security, providing for lasting technical competence, and improving the effectiveness of our communications with the public, are not different from challenges faced by nuclear regulators and the nuclear industry world-wide. The global economy is here in full force, and it is my deepest hope that it will contribute, in a substantive way, to a greater understanding across the many cultures and languages within the international community.

More specifically, I noted earlier that the NRC is an active partner in many bilateral, multilateral, and other international nuclear regulatory initiatives. I personally make a point of attending, participating, and speaking at a variety of international forums, including this Santa Fe Seminar workshop. Next year I look forward to my first trip to Japan as an NRC Commissioner, where I plan to attend the Japanese Atomic Industrial Forum. In my prior career, I had the very enjoyable opportunity to visit the reactors at Kashiwazaki-Kariwa and Hamaoka. I've also visited your Monju reactor and the most impressive work at Tokai with high temperature gas reactors. I look forward to future opportunities to visit Japan again.

The NRC has had a long and beneficial relationship with our Japanese counterparts, primarily in the Nuclear and Industrial Safety Agency (NISA), the Japan Atomic Energy Agency (JAEA), Japan Nuclear Energy Safety Organization (JNES), and the Nuclear Safety Commission (NSC). Just within the past year alone, we have established cooperative

agreements to research material degradation and seismic issues and participated in joint conferences and workshops on a variety of subjects. I'd like to specifically acknowledge the very efficient and effective information sharing that occurred following the Niigata earthquake and Japan's very prompt international exchange of technical information. Much benefit has been and is being gained from that experience. I also know that NISA appreciates the opportunity to send its personnel to work at NRC for several months, and we are honored to host these assignments.

Another important aspect of cooperation involves our membership in the "Multinational Design Evaluation Program" (MDEP) initiative with several other nations. I believe this multinational program can provide an extremely beneficial forum to exchange worldwide nuclear regulatory knowledge and experience in a cooperative effort to establish common regulatory standards for new reactor designs, identify diverse regulatory perspectives, and to share resources in completing the necessary regulatory reviews. I appreciate Japan's support and participation in this initiative.

In addition, I have always been a firm believer in the importance of research and the need to verify our assumptions and regulatory decision bases. International experimental testing facilities enable us to share the burden and the resulting value of expensive research. This helps us all provide sound technical bases for our regulatory decisions.

Finally, NRC senior management and Commissioners have had active and beneficial engagements with Japan. For example, before he left the Commission last spring, Commissioner Merrifield visited NISA, and within each of their first years on the Commission, Chairman Klein and Commissioner Jaczko also visited Japan. The Chairman participated in the Japan Atomic Information Forum this past April.

As we are preparing for new reactor construction in the U.S. a number of NRC staff and managers have visited Japan to learn more about construction techniques and large component fabrication facilities where it is expected that many new U.S. reactors will procure such components. Most recently these visits have included our Executive Director for Operations (EDO), Luis Reyes, and his Director of the Office of New Reactors, Bill Borchardt, to Japan Steel Works.

Closing

It is in this spirit of cooperation that I encourage continued interactions between our countries. I wish you a successful workshop here this week. I truly hope that our efforts here help lead us to better appreciate and value our rich global diversity, not just for its own sake, but because it will help us all accomplish our mutual objective of creating a better world for those generations who will follow us.

Let me leave you with an old English saying: "Many hands lighten a heavy load."

Let me complement that with an old Japanese saying: "Wachuukyoudou" - harmony in cooperation.

Thank you.

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